BY ORDER OF THE COMMANDER

89 AW INSTRUCTION 21-101

14 NOVEMBER 1997

Maintenance

INDUSTRIAL RADIOLOGY

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction establishes guidance toward the safe use of X-ray equipment for industrial radiographic purposes. It applies to those individuals assigned to the 89th Maintenance Squadron (MXS), Nondestructive Inspection (NDI). Laboratory, 89 AW Command Post, and 89 AW Safety at Andrews AFB, MD. References: Technical Orders (TO) 33B-1-11, Chapter 5; 11H4-6-1-1; llH4-6-3-61; 11H4-7-15-1; 3383-3-8-11; 33B3-11-l; 33B3-3-21-1; AFOSH Standard 127- 110; and all applicable assigned NDI manuals.

1. General. The following policies are established in cooperation with the 89th Bioenvironmental Engineering Services, 89 MDG/SGPB, and are applicable to all 89 AW personnel.

2. Responsibilities and Procedures. The 89 AW/CC has overall responsibility; however, the NDI laboratory section chief has primary responsibility of ensuring the following procedures are carried out:

2.1. Shielded Radiation Inspection Procedures:

2.1.1. All shielded radiographic operations will be conducted in Building 179 1, ND1 laboratory exposure room, in accordance with annual bioenvironmental certification survey.

2.2. Unshielded Radiation Inspection Procedures:

2.2.1. Warm-up for the X-ray unit to be used will be accomplished within the NDI laboratory exposure room.

2.2.2. All unshielded radiographic inspections will be scheduled from 0001-0700 when feasible.

2.2.3. The NDI lab supervisor will ensure the fire suppression system is isolated during all X-ray operations.

2.2.3.1. Coordination will be with the building custodian.

2.2.3.2. Building custodian will contact the fire department prior to X-ray.

2.2.4. The organization possessing aircraft to be inspected will position and make the aircraft safe for maintenance.

2.2.5. 89 MXS/LGM (Mike 4) will be notified prior to the start and at the end of X-ray operations.

2.2.6. Exposures will be held to the minimum time possible to adequately perform required inspection.

2.2.7. One qualified radiographer and two qualified safety monitors will be present during all unshielded radiographic operations. The radiographer will operate the control box of the X-ray unit. The safety monitors will be strategically located to provide adequate surveillance over the entire area. In the event the perimeters of the hangar are clearly visible, the inspection can be accomplished with two individuals. The senior radiographer will operate the control box of the X-ray unit and the second individual will act as a safety monitor.

2.2.8. Each of the safety monitors will be provided two way communication devices to be used to signal the Radiographer operating the control box. Prior to each exposure, the following signals will be used:

2.2.8.1. When operations are in the fuel cell, whistles will be used in lieu of radio(s) for safety considerations.

2.2.8.2. Verbally ask “area clear”--await replies.

2.2.8.3. Verbally announce “beam on.”

2.2.8.4. Verbally announce “beam off --await echo, “beam off.”

2.2.9. All non-radiographic personnel, to include security police, will vacate the radiation area, to be determined by the senior radiographer.

3. Emergency Procedures. Whenever an overexposure is suspected, an emergency situation will be considered to exist and the following actions will be taken:

3.1. NDI will immediately cease all X-ray operations and initiate implementation of radiation overexposure checklist (see **Attachment 1**).

3.2. Refer to T.O. 33B-1-1, Chapter 5, Paragraph 5-58 1, and complete all measures listed under Suspected Overexposure Actions.

4. Deviations. Any deviations to this directive must be approved by Andrews APB Bioenvironmental Engineering Services, 2-2559.

ARTHUR J. LICHTE, Brig Gen, USAF
Commander

Attachment 1

RADIATION OVEREXPOSURE NOTIFICATION CHECK SHEET

When a radiation overexposure has taken place, immediately implement the following notification procedures:

1. ND1 personnel will notify:

1.1. Mike 4 to cordon off the area.

2. Mike 4 will notify:

2.1. SAM 4, MXS Commander, MXS Supervision, and Squadron Safety.

2.2. Bioenvironmental Engineering Services, 89 MDG/SGPE.

2.2.1. Normal duty hours. 2-2559.

2.2.2. After duty hours, contact through Malcolm Grow information desk. 2-59 11.

2.3. MACC. via radio or 2-2211/2212.

2.4. HS/MA, when working in Hangar 1.

3. MACC will notify:

3.1. Command Post.

3.2. 89 LGICC.

3.3. Base Safety.

3.4. 89 OGKC, when working Hangar 1.